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Introduction

During the first trimester of 2021, a national vaccination campaign was deployed against the virus in the Dominican Republic. First to be implemented were vaccines based on adenovirus vector delivery, followed by mRNA-based vaccines. To better understand the effectiveness of vaccine among vaccinated and unvaccinated persons in relation to SARS-CoV-2 variants we analyzed clinical and molecular data

Results

In this study, we analyzed the data of thirty-three (n=33) hospitalized COVID-19 cases from June to September 2021 and compared the distribution of SARS-CoV-2 variants to the vaccination scheme and outcome. Among the 33 studied cases, we identified 74% (n=14) with a complete vaccination scheme (2-doses) and 25% (n=5) with an incomplete vaccination scheme (1-dose). Variant circulation among the infections was mainly due to B.1.621 (Mu) and rapidly shifting to B.1.617 (Delta) variant. Our study found that with this vaccine schedule survival rate among two-dose vaccinated individuals was 73% compared to 65% in unvaccinated individuals, and no differences in outcomes between Mu, Iota, or Delta infections were observed.

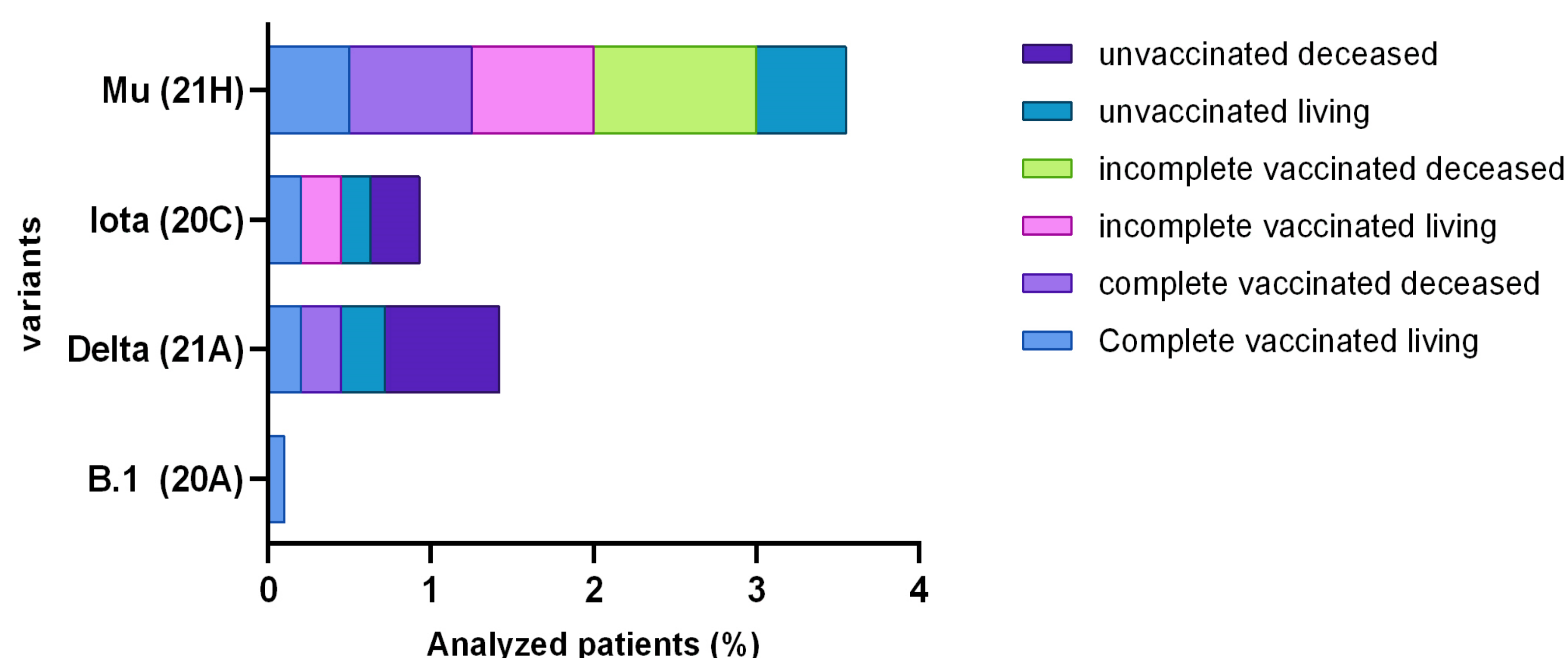


Figure 2. Analyzed variants and outcomes of SARS-CoV-2 patients with or without prior vaccination.

Conclusions

This suggests that variant of interest can also have a deleterious impact on vaccinated individuals.

Methods

Confirmed positive samples were processed for the amplification of SARS-CoV-2 RNA using RT-PCR and subsequent genome sequencing with Oxford Nanopore SQK-109 ligation sequencing kit.

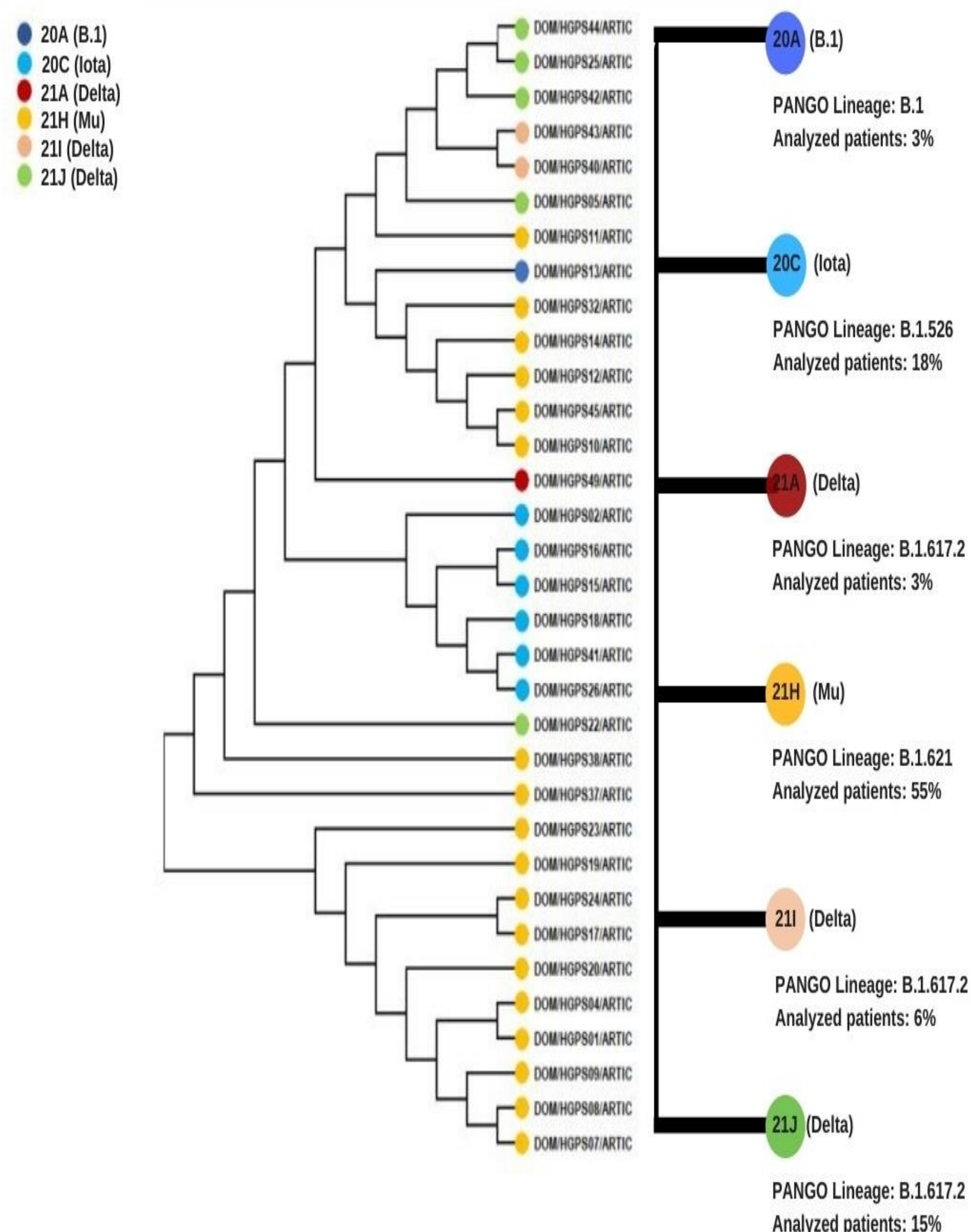


Figure 1. Phylogenetic analysis of SARS-CoV-2 cases and collected genome sequences in the Dominican Republic.

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